Reviewer's report

Title: Utility of qualitative C-reactive protein assay and White blood cells counts in the diagnosis of neonatal sepsis at Bugando Medical Centre, Tanzania

Version: 1 Date: 26 August 2014

Reviewer: Tina Slusher

Reviewer's report:

This is a very important paper and definitely of interest to all who treat neonates with sepsis in LMICs. I think it is important addition to the literature. I struggle with whether to call my major suggested revision compulsory or not. I do think it would strengthen the paper significantly if the authors would address they would use their data in the absence of reliable cultures to determine if it is appropriate to discontinue antibiotics at 3 days or not. Many times the question is not whether to start antibiotics but whether it is safe to discontinue them at 3 days. i.e. in well appearing infants with 3 normal CRP's and 3 normal WBC's would you confidently discontinue antibiotics? IF not what other criteria would make it possible to discontinue antibiotics before 7 days. Are there other combinations of CRP and WBC that would allow you to stop antibiotics early? In my own country as well as in Africa that is often the tougher decision. Most everyone should and does have a low threshold for starting antibiotics if anything is not quite normal in a neonate but how soon can you safely stop them in a well appearing infant is less clear on both sides of the water. As you accurately point out the quality of blood cultures often complicates this decision and is quite variable from lab to lab. I am not sure any test will allow any of us to withhold antibiotics in neonates with suspected clinical sepsis but shortening the duration to the safe minimum number of days should also help with resistance.

Minor revisions include:
1. Extra space page 2; line 9 between neonates and 224
2. Page 3 Line 1 should read about two thirds
3. Page 3 Line 19 Need space or hyphen between 3 and days
4. After the first use of C-reactive protein consistently use the abbreviation except at the beginning of a sentence where you can spell it out but then don't use the abbreviation as well. Several places need to have the hyphen added to the C-reactive protein phrase.
5. Page 6 Line 21 needs space or hyphen between 2 and ml
6. Page 11 Line 12 extra space between Nigeria and whereby
7. Page 13 Lines 3-6. Would rephrase as Other limitations include lack of lumbar puncture and culture in infants more than 24 hours old (if that is correct) due to lack of appropriate instruments and/or supplies. Additionally the blood culture was done using only the aerobic manual system again because of lack of
equipment and supplies. Finally, there was no control group due to ethical constraints and difficulty obtaining blood in infants who have no clinical suspicious for sepsis.

I strongly agree that a quantitative CRP would likely be more useful and the study should be done. I encourage you to do it. However if the semi-quantitative is available and affordable in LMICs and the quantitative is either not available or not affordable for routine non-study patients as I suspect, then your study is even more important than at first glance.

It might also be helpful to see the CRP trend graphed in infants with +blood cultures over 3 days versus those infants with negative blood cultures.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests